The Future of Urban Transport

Founder and Chief Scientist
Dr. Nathan Jauvtis
Past and present informs the future
Cities are changing
Cities are growing

Number of Cities with 1M+ Population

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1650</td>
<td>0</td>
</tr>
<tr>
<td>1700</td>
<td>0</td>
</tr>
<tr>
<td>1750</td>
<td>0</td>
</tr>
<tr>
<td>1800</td>
<td>0</td>
</tr>
<tr>
<td>1850</td>
<td>0</td>
</tr>
<tr>
<td>1900</td>
<td>0</td>
</tr>
<tr>
<td>1950</td>
<td>50</td>
</tr>
<tr>
<td>2000</td>
<td>450</td>
</tr>
<tr>
<td>2050</td>
<td>500</td>
</tr>
</tbody>
</table>
Current transport systems are not sustainable
Most trips are short
(Source: 2009 NHTS Report)

- US average car trip: 6 miles
- US average commute: under 14 miles
- Time wasted in traffic: 62 hours per year

Conventional options don’t work

- **Cars** are hard to park / stuck in traffic / $$$
- **Buses** are slow / unreliable / stuck in traffic
- **Motorcycles** are heavy / require a special license
- **Bicycles** are exhausting / range-limited / slow

Getting around in a city is a real pain
Doing nothing makes these problems worse
Doing nothing makes these problems worse
Doing nothing makes these problems worse
What about the tech?

“Everything that can be invented, has been invented”

*Charles Duell*

Commissioner of USPTO

(1899)
What about the tech?
What about the tech?
What about the tech?
What about the tech?
What about the tech?
What about the tech?
Some cities have thoroughly embraced 2-wheelers

An ordinary day at an ordinary intersection in Taiwan

Population: 23 M
Registered 2-wheelers: 15 M

Benefits
- Reduced congestion
- Good in traffic
- Easy to park
- Cheaper than a car

Drawbacks
- Pollution
- Maintenance
- License required
People want green but there’s no solution yet

- cool
- thrilling
- affordable
- easy to ride
- approachable
- no license req’d

- dorky
- heavy
- intimidating
- license req’d
- cheaply made
- or overly expensive

E-Motorcycle

E-Scooter

E-Bicycle
Our Mission

Create uniquely-attractive, fully-electric motorbikes for urban transport that are simple to operate, fun to ride, and desirable to own.
If Tesla and Honda had a love child with Apple…
M-1: The Ultimate Urban Transporter

part bicycle / part motorcycle

all-electric

Cool

Eco

Smart
The most popular vehicle in history

Honda Super Cub

87 million units sold

Bolt is

Smarter | Cleaner | Simpler
Some cool Bolt tech
Some cool Bolt tech
Some cool Bolt tech
Some cool Bolt tech
“Luck is where Opportunity meets Preparation”

Seneca

Roman Philosopher
Success

“Luck is where Opportunity meets Preparation”

Bolt
Market Size: build US  →  expand globally

Target Market: $7.5B

Bolt (2020): $143M

US

- Europe ($10B): 1.2M powered 2-wheelers + 750K E-bikes sold (2013)
- S.E. Asia ($55B): 11M powered 2-wheelers sold (2013)

Global

- US E-bike growth forecast: 20% per year through 2018 (Source: 2012 Pike Research)
- Increasing urban density
- Connected devices
- Gas is expensive
- Increasing electric vehicle ownership
- Renewable energy development
Bolt Motorbikes merges passion with capability

50 years + 150,000 miles riding experience

electric motorcycle, scooter and wheelchair production

patented battery and drivetrain technology, more pending

Nathan Jauvtis, Founder & Chief Scientist
Ph.D. Mechanical Engineering, Cornell University

Zach Levenberg, Co-Founder & CTO
Mechanical Engineering and Robotics

Don Hutchison, Advisor
Bolt Motorbikes merges passion with capability

Over a decade in auto and technology sales experience

Internationally-recognized brand development

Josh Rasmussen, Co-Founder & CEO

Noah Sherman, VP Consumer Care

Marla Fong, Communications Liaison
Bolt Motorbikes merges passion with capability

Nick Nieminen, New Guy

Bryan Curtin, Mechanical Engineer

Robotics
Renewable Energy Engineering
Photovoltaic Engineering
Mechanical Engineering

Cornell University

GM

UNSW

CSIRO
## Competition

<table>
<thead>
<tr>
<th>Categories</th>
<th>Brands</th>
<th>Attributes</th>
<th>Price Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E- bicycle</strong></td>
<td>Faraday, Kalkhoff, Stromer</td>
<td>Unhip, low power and low range, flimsy construction</td>
<td>$3000 - $7000</td>
</tr>
<tr>
<td><strong>E- scooter</strong></td>
<td>Stealth, Genze, Xkuty</td>
<td>Expensive, requires license, insurance, registration</td>
<td>$4000 - $12000</td>
</tr>
<tr>
<td><strong>Gas scooter</strong></td>
<td>Yamaha, Sym, Vespa</td>
<td>Requires gas, oil, maintenance, license, insurance, registration</td>
<td>$3500 - $6000</td>
</tr>
</tbody>
</table>

### In a crowded market, Bolt stands out.

- Rugged construction built to handle city riding
- Unique style
- High-tech, low-maintenance
- No paperwork
Bolt’s Secret Sauce

First to market with most popular form factor in history

Fanatical focus on user experience

Bolt controls production
  • Convert raw materials to finished goods faster than anyone else

Integrated SW / HW solution
  • Optimize customer experience

Ultra-low cost of ownership
  • Saves users time and money
  • Increases quality of life

Experienced team
  • Volume production
  • Science
  • Riding
  • Sales

Technology-driven ... not just an afterthought
  • Mobile connectivity
  • Patented battery and drivetrain tech
## Product Roadmap

<table>
<thead>
<tr>
<th>New Models</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1</td>
<td>$5500</td>
<td>$5500</td>
<td>$6000</td>
<td>$6000</td>
</tr>
<tr>
<td>M-1S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M-P</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M-C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSRP</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5500</td>
<td>$5500</td>
<td>$6000</td>
<td>$6000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average Cost of Goods</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4900</td>
<td>$4000</td>
<td>$3100</td>
<td>$2200</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Milestones</th>
<th>Beta test Production</th>
<th>Enhanced perf. High-volume mfg.</th>
<th>Introduce multi-platform motorbike</th>
<th>Introduce motorcycle class</th>
</tr>
</thead>
</table>

My childhood memory
The future of urban transport …

Rolls on two wheels

Is electric

Is connected

Can be ridden by anyone
Thank You

Nathan Jauvtis PhD, Founder | nate@boltmotorbikes.com | San Francisco, CA | 415-722-5453
Appendix
APPENDIX B: Tech specs

- **ECONOMY MODE**
  - 20 mph
  - 1000 watts
  - 50 mile range

- **SPORT MODE**
  - 40 mph
  - 5500 watts
  - 30 mile range

- **INTUITIVE DASHBOARD USB CHARGER**
- **33v / 51 Ahr LITHIUM ION QUICK RELEASE BATTERIES**
- **17" ALLOY RIMS 220mm DISK ROTOR**
- **BRUSHLESS DC MOTOR REGENERATIVE BRAKING**

Mobile App - Bluetooth Enabled
- 5hr Smart Charge
- Keyless Entry and Security
- Ultra Low Maintenance